

REJECTION UNDER 35 USC § 103

The Examiner rejected Claims 1-5 under 35 U.S.C. § 103(a) as being unpatentable over Couture (U.S. Patent No. 5,753,991) in view of APA. The Examiner also rejected Claims 5-12 under 35 U.S.C. § 103(a) as being unpatentable over Pletscher (U.S. Patent No. 1,566,693) as applied to claim 1-4, and further in view of Tetsudo (JP 02119544).

After carefully reviewing the references that have been cited and applied in the rejection of claim 1, applicants respectfully submit that none of the references cited by the Examiner, or any combination thereof, render the present invention obvious. Furthermore, none of the cited references are in the field of applicants' endeavor or are reasonably pertinent to the particular problems with which the inventors attempted to cope.

The inner surface and the outer surface of the magnet cylinder in APA are smooth, and more winding coils and larger silicon sheets are employed for starting a rotor of a motor and avoiding a locked condition. In addition, the silicon steel sheet is customarily designed to be asymmetric for changing the air gap between the stator and rotor during the starting period. It has been found that increasing the winding coils causes the motor to be damaged through overheating, and the larger and asymmetric silicon steel sheets are costly and occupy more space.

The magnetic cylinder of the present invention has a wavy curve surface on either the inner surface or the outer surface thereof. The structure of the magnet cylinder according to the present invention is very distinguishable from that of APA. Owing to the wavy curve surface, the magnetic cylinder of the present invention more easily develops the torque and dissipates heat generated within the gap, which avoids the rocked rotor condition and increases the operating life of the motor. In addition, since the torque is easier to develop in the present invention, the silicon steel sheets can be symmetrical and the size of the sheets can be reduced so as to reduce their fabricating cost. Based on the foregoing, the present invention provides a novel and non-obvious improvement over the APA.

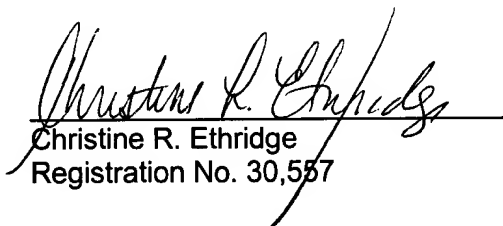
The rotor of Couture is composed of a rotor frame 1 and a plurality of magnets 3. Since the plurality of magnets 3 are separately disposed on the rotor frame 1, the magnetic conductance produced from the magnets would likely be discontinuous. In addition, the process

magnetic force is generated to conveniently drive the rotor and eliminate the electromagnetic noise. Furthermore, the particular problems with which the present inventors attempt to cope, i.e. heat dissipation, rocked rotor condition and the fabricating cost of silicon steel sheets, are very different from the problems addressed by Tetsudo. Thus, the Tetsudo disclosure would not teach or suggest to a person skilled in the art the present invention.

Accordingly, the APA in combination with any one or more of the cited references neither discloses nor suggests the structure of the subject application to a person skilled in the art. Therefore, the amended claims 1, 5, 9 and 11 recite a novel and non-obvious invention. For the reasons expressed above, applicants submit that claims 1, 5, 9 and 11 are patentable.

The claims 2-4, 6-8, 10 and 12 are also patentable owing to their dependency from claims 1, 5, 9 and 11. Reconsideration and allowance of claims 1-12 are respectfully requested. If the undersigned can be of assistance to the Examiner in advancing the subject application to allowance, the Examiner is urged to contact the undersigned at the number set forth below.

Respectfully submitted,


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